

## A Review of New Guinean *Ochleroptera* Holmberg 1903 (Hymenoptera: Sphecidae)

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*Abstract.*—The New Guinean species of *Ochleroptera* Holmberg are reviewed, and a key for their identification is provided. *Ochleroptera novaguineensis* Bohart is redescribed, and the following three new species are described: *gendeka*, *nigrochypeata*, and *obscura*.

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*Ochleroptera* Holmberg is a bembicine genus of 12 known species, of which one occurs in North America, one in the Caribbean, 9 in Central and South America, and one in New Guinea (first reported from that island by Bohart 1970). Subsequent to Bohart and Menke (1976), *pygmaea* Brèthes has been transferred to *Pluto* (van Lith 1979), and *sanambrosiana* Pérez D'Angello (1980) was added. During my fieldwork in New Guinea in 1987 and 1988, I collected specimens of an undescribed species, and Colin R. Vardy, then at the British Museum (Natural History), London, United Kingdom, kindly provided additional material. The total number of species is thus brought to 15. All New Guinean species of *Ochleroptera* are reviewed below.

*Ochleroptera* is similar to *Clitemnestra* Spinola 1851, and Bohart and Menke (1976) separated them only by the shape of the first gastral segment, which is comparatively broad in the latter, but elongate in the former. There are several problems with this classification. First, some undescribed Neotropical forms appear to be intermediate, making the distinction of the two genera tenuous (Colin Vardy, pers. comm.). Menke and Fernández (1996:59) concur that the abdominal characters used to separate these two

genera are unreliable in Neotropical species and that *Ochleroptera* may prove to be a synonym. Second, the broad gastral base appears to be plesiomorphic within Gorytini, hence recognition of *Ochleroptera* may make the other genus paraphyletic. Third, elongation of gastral segment I may well have occurred more than once, hence there is no certitude that the New World and New Guinean *Ochleroptera* developed from a single ancestor. Solving these problems, however, is beyond the scope of this paper.

### SOURCES OF MATERIAL

The specimens examined belong to the following institutions:

- ANIC: Australian National Insect Collection, c/o Commonwealth Scientific and Industrial Research Organization, Canberra, A.C.T., Australia.
- BMNH: British Museum (Natural History), London, United Kingdom; currently: Natural History Museum.
- BISHOP: Bernice P. Bishop Museum, Honolulu, Hawaii, USA.
- CAS: California Academy of Sciences, San Francisco, California, USA.
- UCD: Bohart Museum of Entomology, University of California, Davis, California, USA.

## KEY TO NEW GUINEAN SPECIES OF OCHLEROPTERA

1. Propodeum adjacent to enclosure with well-defined punctures; setae of head and thoracic dorsum longer (e.g., genal setae at least as long as midocellar diameter) . . . . . 2
- Propodeum adjacent to enclosure with microscopically small, evanescent punctures, practically unsculptured; setae of head and dorsum shorter (e.g., genal setae shorter than midocellar diameter) . . . . . 3
2. Thorax and gastral segments II–IV with no yellow markings; legs brownish red (all or largely so); tergum I proportionately longer (Fig. 3) . . . . . *obscura* Pulawski, sp. n.
- At least pronotal collar, metanotum (except laterally), and tergum II marked with yellow; legs black or with yellow markings; tergum I proportionately shorter (Fig. 2) . . . . . *gendeka* Pulawski, sp. n.
3. Clypeus yellow except for narrow brown strip along free margin; propodeum with a pair of yellow spots; female: preepisternal area of mesonotum yellow; tergum I proportionately longer (Fig. 3) . . . . . *novaguineensis* Bohart
- Clypeus largely black; mesopleuron and propodeum all black; tergum I proportionately shorter (Fig. 2) . . . . . *nigroclypeata* Pulawski, sp. n.

## DESCRIPTIONS OF SPECIES

The following characters that vary in other *Ochleroptera* are shared by all four New Guinean species: clypeus flat (not step-like near free margin); scutum with two types of punctures and two types of setae: short setae emerging from small punctures, longer setae emerging from larger punctures (larger punctures sparser than small ones); subalar fossa not marginate below; propodeal enclosure unsculptured, shiny; tergum I with no oblique, basal carinae; laterotergite I absent anteriorly, conspicuously narrow posteriorly; male sternum VIII broadly truncate apically; and yellow are: scapal venter, frons below antennal sockets, and narrow paraorbital band extending up to about one third or half of frons height.

*Ochleroptera gendeka* Pulawski, sp. n.

*Derivation of name.*—Named after the Gendeka people of the Madang Province, Papua New Guinea, in whose territory the type locality is located.

*Diagnosis.*—As in *obscura*, the setae on the interocellar area and scutum anteriorly are longer than a midocellar diameter in *gendeka*. In *gendeka*, however, at least the pronotal collar, metanotum (except later-

ally); and tergum II are marked with yellow rather than being black; the legs are all black or marked with yellow; and tergum I is proportionately shorter (Fig. 2).

*Description.*—Propodeum adjacent to enclosure with well-defined punctures. Tergum I as in Fig. 2. Sternum I not ridged or with rudimentary ridges basally. Clypeus yellow (except narrow, black fascia along free margin) to largely black (see Variation below). Flagellum black or flagellomeres I and II brown ventrally (at most weakly so in males). Thorax black, but the following are yellow: pronotal collar, pronotal lobe (all black in some females), preepisternal area of mesonotum in many females and most males, metanotum (except laterally), scutellum in many males (see also Variation below). Gaster black, with yellow apical fascia on terga I and II (fascia on tergum II continuous to broadly interrupted mesally). Female terga III–VI all black or terga III–V fasciate apically and tergum VI yellow laterally (a frequent combination includes black terga III and IV and fasciate tergum V). Male terga III–VI varying from all black (Western Highlands specimens) to fasciate apically (most specimens from Madang Province); tergum VII either yel-



Fig. 1. Collecting localities of *Ochloptera* in New Guinea.

low or black. Femora all black or with apicoventral spot (all venter yellow in some males). Foretibia black except outer surface yellow (also inner surface in some females); mid- and hindtibiae all black, or yellow basodorsally or dorsally, or brown or yellow ventrally. Foretarsus varying from black to yellow, mid- and hindtarsi varying from black to brown.

**Variation.**—In most specimens examined, the clypeus is largely yellow, with only a narrow black band along the free margin (width of black band varying from about half antennal socket diameter to more than one diameter mesally in some females), and the female scutellum is all black. The single female specimen from Goilala in the Owen Stanley Range, has the clypeus largely black, yellow only along frontoclypeal margin (width of yellow band about equal to antennal socket), and a narrow yellow strip adjacent to scutellar hindmargin.

**Prey.**—Three females were collected as they were flying with prey. All three prey are adult Cicadellinae, two of which are Dorycephalini (det. Norman D. Penny).

**Records (Fig. 1).**—**Holotype:** ♀, Papua New Guinea: Madang Province: 5 air km NE Mundiai Pass at 5°46'S 145°09'E, 2500 m, 14 May 1988, W.J. Pulawski (CAS). **Paratypes:** PAPUA NEW GUINEA: **Central Province:** Goilala at Loloipa River in Owen Stanley Range, circa 8°16'S, 146°59'E, 21–31 Dec 1957, W.W. Brandt (1 ♀, BISHOP). **Madang Province:** 5 air km NE Mundiai Pass at 5°46'S 145°09'E, 2500 m, W.J. Pulawski, 14 May 1988 (3 ♀, 2 ♂, CAS) and 17 May 1988 (1 ♀, 11 ♂, CAS); Pandambai, 6 air km W Bundi at 5°38'S 145°11'E, 2300 m, W.J. Pulawski, 10–13 May 1988 (7 ♀, 9 ♂, CAS), 15 May 1988 (2 ♀, CAS), and 18 May 1988 (2 ♀, 5 ♂, CAS); Simbai, 5°17'S 144°26'E, W.J. Pulawski, 25–26 Mar 1987 (1 ♀, 16 ♂, CAS), 27 May 1988 (30 ♂, CAS), 31 May 1988 (7 ♂, CAS), 1 June 1988 (3 ♂, CAS). **Morobe Province:** upper Gumi [Creek] near Wau [7°12'S 146°25'], 20 Mar 1981, H. Roberts (2 ♂, BMNH); Wau, 1000 m, Oct 1979, I. Gauld (1 ♀, BMNH). **Western Highlands:** Mt. Hagen Range: Murrur Pass, 8700 ft [= 2870 m], 27 Oct–20 Dec 1961, W.W. Brandt (7 ♀, 3 ♂, ANIC).

***Ochloptera nigroclypeata***  
Pulawski, sp. n.

**Derivation of name.**—The Neolatin feminine adjective *nigroclypeata* is coined from two Latin words: *niger* (for black) and *clypeus*.

**Diagnosis.**—The female of *nigroclypeata* (the male is unknown) can be recognized

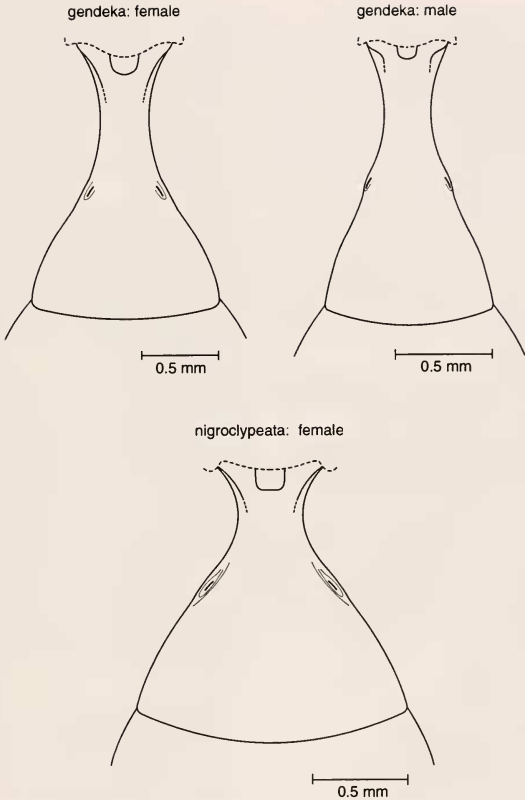


Fig. 2. *Ochloptera gendeka* and *nigroclypeata*: outline of tergum I.

by the combination of the clypeus largely black, propodeum practically unsculptured adjacent to the enclosure, and the setae adjacent to the hypostomal carina

shorter than a midocellar diameter. In the other New Guinean species, the clypeus is all yellow except largely black in some *gendeka*. Also, tergum I of *nigroclypeata*

(Fig. 2) is proportionately shorter than in the other New Guinean species.

*Description* (female only).—Propodeum adjacent to enclosure with microscopically small, evanescent punctures, practically unsculptured. Tergum I as in Fig. 1. Sternum I irregularly ridged on basal half. Antennal flagellum yellowish basoventrally. Yellow are: clypeus along frontoclypeal suture, pronotal collar (pronotal lobe black), metanotum (except laterally), apical fascia on tergum I; also small apicolateral spot on tergum II and narrow, apicomeral fascia on tergum III in one specimen examined. Legs reddish brown in one specimen; in the other, femora as well as mid- and hindtibiae largely dark, almost black.

Male unknown.

*Prey*.—The holotype female is pinned with a cicadellid nymph, presumably her prey (det. Norman D. Penny).

*Records* (Fig. 1).—*Holotype*: ♀, Papua New Guinea: Morobe Province: NE Wau at 1150 m, 19 Sept 1971, J. Sedlacek (BISHOP). *Paratype*: PAPUA NEW GUINEA: same locality as holotype, 7 Dec 1972, O.W. Richards (1 ♀, BMNH).

### *Ochloptera novaguineensis* R. Bohart

*Ochloptera novaguineensis* R. Bohart, 1970:387, ♂. *Holotype*: ♂, Papua New Guinea: Madang Province: Finisterre Range: Matoko Village in the Saidor area; not Wau in Morobe Province (BISHOP), **present correction**, examined.—Bohart and Menke, 1976:490 (listed).

*Correction of type locality*.—Bohart apparently confused the locality labels of the two specimens he examined. According to the original description, the holotype (deposited at BISHOP) came from Wau, and the single paratype (deposited at UCD) from the Saidor area. In reality, the holotype's locality label indicates the Saidor area as its origin, and the paratype's label (at UCD) gives Wau. The two specimens can be easily identified by the differences indicated in the original description: the holotype has both flagella missing and no yellow markings on tergum IV, whereas

the paratype has one flagellum preserved (glued to a piece of cardboard now) and a broken yellow line on tergum V. Although the International Code of Zoological Nomenclature provides no guidelines for this situation, I treat as the holotype the specimen from BISHOP so labeled by the author and agreeing with the description (i.e., the male from the Saidor area, not the one from Wau).

*Diagnosis*.—This species differs from the other New Guinean *Ochloptera* in having a light brown rather than black stripe along the clypeal free margin, a pair of yellow spots on the propodeum, and a yellow, apicolateral spot on tergum II. The yellow preepisternal area of the mesopleuron, typical of *novaguineensis*, is also found in some *gendeka*.

*Description*.—Propodeum adjacent to enclosure with microscopically small, evanescent punctures, practically unsculptured. Sternum I transversely ridged on basal half. Tergum I as in Fig. 3. Antennal flagellum yellow brown basally. Yellow are: pronotal collar, pronotal lobe, scutellum mesally, metanotum (except laterally), a pair of spots on propodeum, broad apical fascia on tergum I, a pair of lateral spots on tergum II, and a narrow apical fascia on tergum III. Femora brown, becoming yellowish toward apex; foretibia and foretarsus yellow or foretibia brown on inner surface, midtibia and midtarsus yellow or brown, hindtibia and hindtarsus brown.

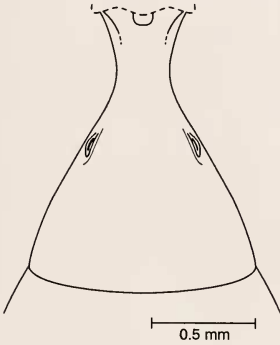
*Records* (Fig. 1).—PAPUA NEW GUINEA: **Madang Province**: Northeastern Finisterre Range: Matoko Village (5°41'S 146°33'E, 1500 m alt.) in Saidor area (1 ♂, BISHOP, holotype of *novaguineensis*). **Morobe Province**: Wau (1 ♀, BMNH; 1 ♂, UCD, paratype of *novaguineensis*), Mt. Missim, 7°13'S, 146°49'E, 1600 m (1 ♀, 1 ♂, BISHOP).

### *Ochloptera obscura* Pulawski, sp. n.

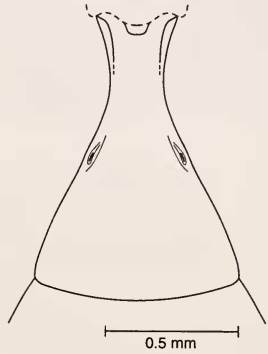
*Derivation of name*.—*Obscura*, a Latin feminine adjective for dark, refers to the coloration of this species.

*Diagnosis*.—*Ochloptera obscura* has an all black thorax and gastral segments II–

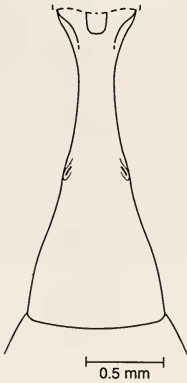
novaguineensis: female



novaguineensis: male



obscura: female



obscura: male

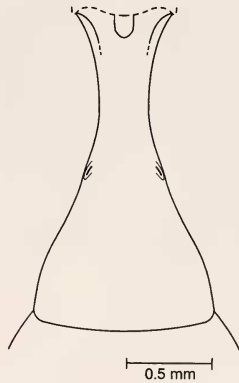


Fig. 3. *Ochleroptera novaguineensis* and *obscura*: outline of tergum I.

V, and reddish tergum I (at least in apical half). In the other three species, at least the pronotal collar, metanotum (except laterally), and tergum II are marked with yellow, and tergum I is black except for apical, yellow fascia. In addition, tergum I of *obscura* is proportionately longer than in the other *Ochleroptera* from New Guinea (Fig. 3).

*Description*.—Propodeum adjacent to enclosure with well-defined punctures. Tergum I as in Fig. 3. Sternum I microsculptured, but with no rugae or ridges. Antennal flagellum reddish brown in female, black in male. Pronotal lobe yellowish brown in female, black in male. Clypeus yellow except narrow black strip along free margin. Legs brownish red in female; in male, forefemur entirely and midfemur largely brownish red, hindfemur, tibiae, fore- and midtarsi brownish red (foretibial outer surface yellow), hindtarsus black. Gaster black except tergum I brownish red (entirely so in female, between spiracles and hindmargin in male); tergum I in male with narrow, apical fascia that is narrowly interrupted mesally.

*Records* (Fig. 1).—*Holotype*: ♀, Indonesia: Irian Barat: Vogelkopf Peninsula: Sururai SW Lake Anggi Giji at 1°24'S 133°55'E, 1900 m, 27 Feb 1963, R. Straatman (BISHOP). *Paratype*: PAPUA NEW GUINEA: **Central Province**: Guar'1 [almost certainly a mistake for Guari at 8°07'S 146°51'S], 1900–2100 m, Oct 1968, N.L.H. Krauss (1 ♂, BISHOP).

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